

# **Fostering the incorporation of SD into the university system. Lessons learned from a change management perspective.**

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## **Abstract**

In research and literature about integration of sustainable development (SD) in higher education, particular attention is given towards barriers for change and critical success factors, mainly with a focus on organisational aspects. Implementation models and integration guidelines were defined in order to guide SD integration in higher education at the level of a single higher education institution (HEI). All these initiatives are looking at factors that can influence the integration process, however seldom from the perspective of change management and the impact of human factors on organisational change. This paper wants to look at the university system from the perspective of change management and, more specifically, focusing on the human factors in this process: resistance, communication, empowerment and involvement, and organisational culture. A conceptual model which links human factors to the SD integration process is used to analyse a specific case study of a Belgian university college. The case study analyses which human factors influenced the SD integration process, and which lessons could be learned from taking a change management perspective in this field.

**Keywords:** SD integration, higher education, change management, human factors

## **1. Introduction: integration of SD in higher education**

During the past years, a lot of initiatives have been taken by higher education institutions (HEIs) to incorporate sustainable development (SD) (Lozano et al., 2013). Some initiatives focus on defining implementation models at the level of a single university or university program (e.g. Lambrechts et al., 2008, 2009, 2010). These models define guiding principles and stepping stones towards sustainable higher education. They also show barriers for change and critical success factors, all from the viewpoint of the university system (Lambrechts et al., 2009, Lozano, 2006). Lozano et al. (2011), based on numerous other authors and publications, describe the barriers for change in higher education as: lack of SD awareness; insecurity and threat to academic credibility from teachers; over-crowded curricula; lack of support; SD considered to have little or no relevance to the course or discipline; uncertainty of the efforts required to engage with and incorporate SD; discipline restricted organisational structures; academic conservatism/traditions that tie universities to old mechanistic mental models. Furthermore, Lozano et al. (2011) state that “university leaders and staff must be empowered to catalyze and implement new paradigms, and ensure that SD becomes the ‘Golden Thread’ throughout the entire university system”. In order to successfully integrate sustainability in higher education, the role of individuals is crucial, yet often overlooked as an important success factor. Factors influencing the integration of SD in higher education have thus been defined and studied (Lozano, 2006, Wals, 2010), often describing organisational barriers and factors, but seldom from the perspective of human factors. The impact of human factors as key factors of success and resistance in business could offer interesting insights for higher education, in order to further guide the process of SD incorporation.

This paper wants to look at SD integration into the university system from the perspective of change management and, more specifically, focusing on the human factors in this process. Previous research

(Verhulst and Boks, 2012; Verhulst, Dewit and Boks, 2012) defined these human factors to have a significant influence on the integration process of sustainability criteria in the product development process of Flemish and Dutch companies. A conceptual model developed by Verhulst (2012) is being presented that enables one to study the integration process of SD in an organisation with a focus on four significant clusters of human factors: resistance, communication, empowerment and involvement, and organisational culture. The model - developed in a study on integration of SD in business - offers a structure for data collection and analysis of organisations going through the integration of SD. In this paper, the conceptual model is applied in a case in higher education. This offers the opportunity to look at the integration process of SD in the context of higher education from a human perspective, a point of view that has not been taken before. Moreover, it offers the opportunity to verify the applicability of the conceptual model in an educational context.

An overview of success factors and obstacles, with a specific focus on factors related to people - human factors - is presented in a literature review in this paper. This offers insights in success factors and resistance in SD integration in business, and makes the link towards higher education institutions. This review results in the presentation of the conceptual model, which brings together four clusters of human factors and the integration process of SD in an organisation.

The second part of this paper focuses on the case of Leuven University College (KHLeuven), a higher education institute in Belgium. The case description and analysis follow the structure of the conceptual model. This offers the opportunity to focus on the human factors that occurred during the SD integration process, and how they influenced the process. The case study provides insights on:

- (a) the occurrence of human factors during the integration process of SD in a HEI;
- (b) the impact of these human factors on specific barriers for change in a HEI;
- (c) lessons that can be learned from the success factors and resistance in business.

## **2. Success factors and obstacles for integration of SD in business**

In this section, insights are gathered on success factors and obstacles within the field of change management. Looking at the integration of SD as a change process might give new perspectives and insights on the process and the factors that influence it.

Change management is the field in which one studies and manages the process of change within an organisation. It is the management's approach to taking an organisation through the transition from today to a new future state (Hiatt and Creasey, 2003). There are three main stages in a change process: a preparatory stage, a change stage with different intervention cycles, and a consolidation stage. Different views are taken in literature on the progress of these stages during a change process. Several authors advocate that the preparatory stage should be completed first and emphasise its importance in the change process (Beckhard and Harris, 1987, Cameron and Green, 2004; de Caluwé and Vermaak, 2006; Kotter and Schlesinger, 2008). Some other authors take an opposite perspective, in which a change process is approached as a dynamic process that starts with small, individual projects and that grows steadily without too much planning in advance (Boiral, 2008; Senge, 2006; Verhulst, 2012). de Caluwé and Vermaak (2006) advocate both approaches and state that a change approach is dependent on the current culture and structure of a firm, but also on the content and type of change that is to take place. Different perspectives on change approaches are thus touched in literature, whereby some authors point in the direction of bottom-up approaches of the integration process.

Many scholars studied factors that influence a change process. These factors can either support or hamper the integration process. Success factors and obstacles are strongly related to each other: one factor can support a change process or approach in a certain situation, whilst this same factor can hamper another change process or approach in different circumstances (de Caluwé and Vermaak, 2006). Therefore, it is more practical to talk about influencing factors. In a literature review made by Verhulst (2012), more than sixty different influencing factors came forward. Many of these factors are related to people - often referred to as the 'soft side' (Boks, 2006; IBM, 2008), the intangibles (Adams, 2003) or the 'human factors' of change (Verhulst, 2012). A study from IBM (2008) indicates that this 'soft side' is the hardest to change, a finding that has also been notified by Struckmann and Yammarino (2003).

There is a high consistency on some human factors that are indicated as success factors in change management literature. These are empowerment and the involvement of employees, human commitment to what needs to get implemented, inductive learning, the adaptation of the organisational culture, and clear communication. Empowerment and involvement are mentioned by several scholars (Adams, 2003; Kegan and Lahey, 2001; Kotter, 1995; Lewis, 2006) whereas in a study of IBM (2008) the human commitment to what needs to be changed gets emphasised. Hiatt and Creasey (2003) confirm the importance of engagement, especially within the change team. Kotter (1995) states that the more people get involved, the better the outcome of the change will be, under the condition that the actions performed by the people fit within the broad parameters of the overall vision on the change.

Many scholars and practitioners directly link failures of a change process with resistance to change (e.g. Kotter and Schlesinger, 1973; Smith, 2005; Pardo del Val and Martín Fuentez, 2003). Belliveau et al. (2004) describe that the challenge during implementation is to overcome resistance, because whenever there is change, there is also some force pushing in the opposite direction. Schein (1988) described resistance as the enemy of change, the foe which must be overcome if a change effort is to be successful. Other authors however consider resistance as a source of information that can be used to support the change process (Waddell and Sohal, 1998). Understanding why and how opposition to change occurs, and developing the ability to respond effectively to manifestations of resistance to change, is crucial to the success or failure of efforts to achieve organisational change (Smith, 2005). Resistance as a phenomenon is considered as the most important obstacle in change management, whereby it forms a key element of the study of organisational change.

### **3. Human factors influencing the integration process**

Based on literature and on a previous study of Verhulst (2012), this paper focuses on four groups of human factors: resistance against change, communication on changes, empowerment, and organisational culture. Each of the human factors is described more in depth in this section.

#### **3.1. Resistance against change towards SD**

Resistance against change can be defined as the opposing forces that occur within an organisation that are related to the integration of sustainable development in higher education. Resistance is often, if not always, present when changes occur. Lewin (1951) described the impact of resistance to change and emphasised the need for deeper insights in these restraining forces. As mentioned earlier, a large number of factors of resistance have been described in the field of change management (e.g. Dent and Galloway Goldberg, 1999; Johansson, 2002; Kotter and Schlesinger, 2008). Doppelt (2003) indicates that resisting factors are related to a change in situation, but not to sustainability as the subject of change. Most scholars that study success factors and obstacles of change focus on the identification and importance of these factors, but few focus on the underlying reasons, the moment or the place of occurrence of these factors (e.g. Boks and Pascual, 2004; Schein, 2004; Verhulst and Boks, 2012).

#### **3.2. Communication on changes**

This is defined as all internal communication that is related to the integration of SD. Different goals of communication are indicated in literature on change management, including: informing stakeholders, lowering resistance, facilitating empowerment and supporting the change process (Lewis, 2006). Indications are given in literature that information on communication is kept rather generic, whereby specific guidance on the content of communication, channels and frequency, amongst other aspects, is lacking (Garside, 1998). Several methodologies that focus on SD provide tools and methods that can support the process, next to the provision of information and knowledge on specific sustainability issues that can be spread throughout an organisation (e.g. UNEP DTIE and DfS, 2009). But few provide specific support on communication concerning human factors (Seidel et al., 2009; Verhulst and Boks, 2012).

#### **3.3. Empowerment and involvement**

Kirkman & Rosen (1999) define four dimensions of empowerment, being 1) group potency, a belief that a group can perform well, 2) meaningfulness, a belief that a group performs important and valuable tasks, 3) autonomy, having independence and discretion in performing the work, and 4) impact, experiencing a sense of importance and significance in the work performed and goals achieved. Based on this definition and on work from other scholars (e.g. Conger and Kanungo, 1988; Karakoc, 2009; Spreitzer, 1995), empowerment is defined and studied according to three dimensions that contain different variables that

provide operational measures for this construct: authority (including power, decision making and responsibility), resources and specialisation (including information, knowledge and skills) and self-determination (including initiative and creativity and autonomy). These measures are considered in (change) management literature to motivate employees and to optimise their skills in function of the organisation. Managers on all levels thus consider and incorporate aspects of empowerment in their daily supervision and guidance of the employees they are responsible for. It forms a part of a manager's function, but it is therefore not inherently connected to a shift towards sustainability or another change within an organisation. Cohen-Rosenthal (2000) indicates a lack of consideration that is given to the aspects of empowerment and involvement during a change process. Literature on change management also indicates that the need for empowerment is emphasised as an aspect that can significantly lower resistance against change and support a change process (Kotter and Schlesinger, 2008).

### **3.4. Organisational culture**

Schein (2004) defines organisational culture as 'a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way you perceive, think, and feel in relation to those problems'. The author defines three levels of culture. Each level thereby represents different variables that provide operational measures for capturing organisation culture as a construct. The levels are: artefacts, espoused beliefs and values, and underlying assumptions. In this article, the definition of organisational culture is based on these levels. It is defined as the cultural characteristics that are present in a firm and that shape an organisation's structures, processes, experiences, values and perceptions. Cameron and Quinn (2006) and Schein (2004), as well as other scholars emphasise the importance of a change in culture inside an organisation next to methods, tools and techniques that can support the process steps of a change. This includes the incorporation of sustainability criteria in its values, ways of thinking, managerial styles, approaches to problem solving, etc. Cameron and Quinn (2006) articulate that these aspects of the fundamental organisational culture need to change in order to implement a change successfully. These authors thus consider a change of organisational culture as an obligatory part of a complete change process. de Caluwé and Vermaak (2006) and Pettigrew and Whipp (1991), amongst other authors in the field of change management on the other hand, advocate an opposite perspective. These scholars stress the need for adapting a chosen change approach to the current organisational culture, in order to raise the chance on successful integration of the changes. In the light of integrating SD in education, both perspectives are conceived as complementary. Adaptation of the change approach in the early stages of the change process can support the progress of the integration process, whereas on the long term, a shift in values, behaviours, symbols and assumptions need to be encouraged and facilitated.

## **4. Linking human factors with the integration process: a conceptual model**

A conceptual model has been developed that brings together the four clusters of human factors with the integration process (Verhulst, 2012). This model (Figure 1) highlights the relationships between the central construct - the integration process of SD - and the human factors. It serves as a basis to structure and analyse the human factors during the integration process of SD in a case in higher education. The integration process of SD in higher education forms the central construct in the model. The four clusters of human factors aim at explaining the progress of this integration process and at gathering insights on the influence of these human factors on the central construct. The model supports the analysis of a case with the aim:

- (a) to gain a better understanding of the different types of resistance that occur, the underlying reason of the resistance, where and when it occurs in the integration process of ESD, and which factors of resistance are directly related to sustainability issues as the subject of change;
- (b) to gather data on the way communication is organised in practice for different goals of communication during the integration process, and how this affects the progress of SD integration in higher education;
- (c) to gather empirical data that offer insights on the way empowerment and involvement are organised and attained in practice during the integration process of ESD;
- (d) to gather insights through empirical data, whereby the question is posed if the organisational culture has changed in the cases towards a new, more sustainable culture, or rather if the change process has been adapted to the present organisational culture.

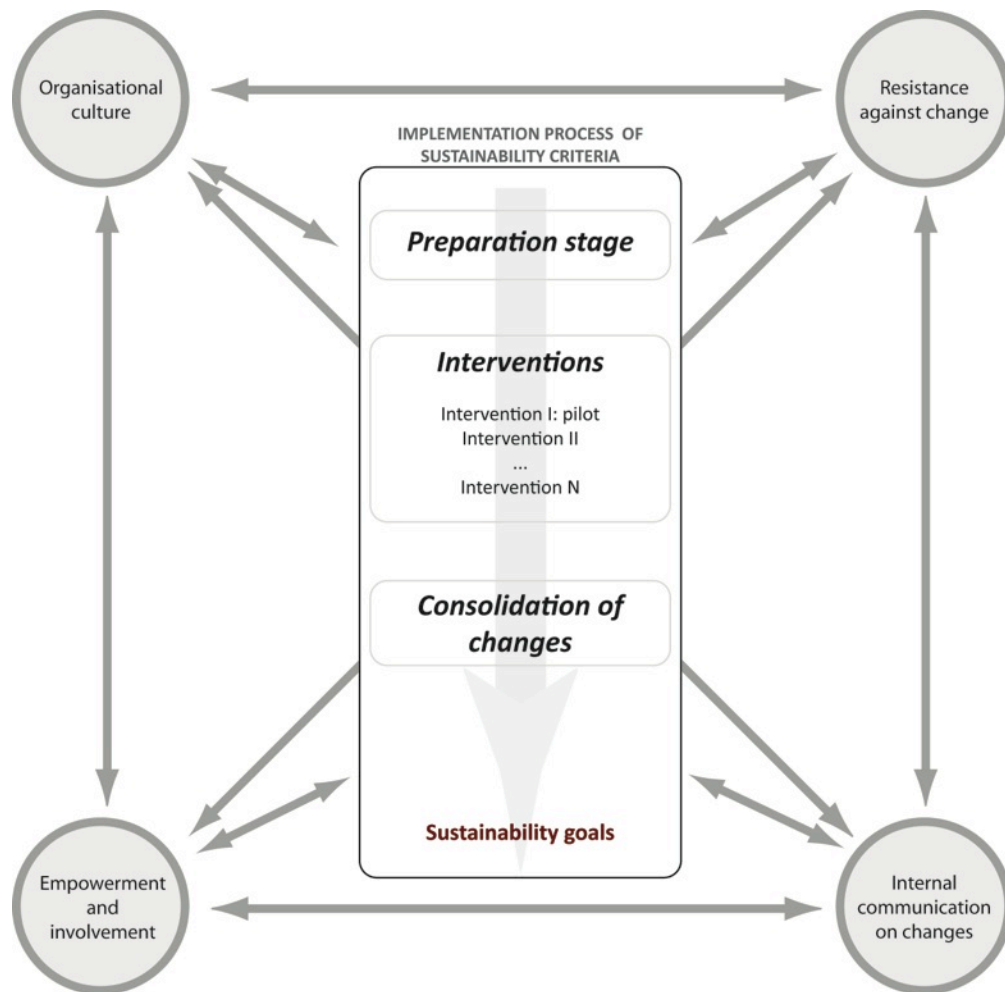


Figure 1 Conceptual model of integration process of SD and four clusters of human factors  
(Source: Verhulst, 2012)

## 5. Case study: applying the conceptual model in higher education

Since 2003, Leuven University College (KHLeuven) in Belgium works on the integration of SD on several levels within the organisation. The SD integration process followed at this HEI serves as case to apply the conceptual model and analyse the process from the perspective of human factors.

The choice for this case is based on several arguments. First of all, this HEI is integrating SD already for several years. Moreover, one of the authors has been strongly involved in the integration process, meaning that much information and sources about the progress and the human factors discussed in this paper were accessible for the authors. Limiting this paper to one case is based on the argument that it is the first time the integration process is studied from the perspective of human factors in higher education, using an existing conceptual model for SD integration in business, which offers a new perspective and a structure for the data collection and analysis.

Based on this case, an adapted conceptual model and method for the study of the integration process in education can be formulated, which can subsequently be applied in a larger number of cases. Moreover, the in-depth case description provides valuable insights on the steps and progress of an integration process of SD in education in practice, added with insights on the occurrence of the four human factors and their impact on specific barriers for change in higher education.

The conceptual model described in the previous paragraph serves as a basic structure for the case description and analysis. First, a description of the case is given, followed by an analysis of the SD integration process and the manner in which the four clusters of human factors have influenced this integration process so far.

### **5.1. Introduction of the Case: Leuven University College - KHLeuven**

Leuven University College (KHLeuven, Katholieke Hogeschool Leuven) is a university college, situated in the Flemish region of Belgium, and offering professional bachelor programs in four departments: Business studies (including business management and office management), Teacher training (kindergarten, elementary school, secondary school, special needs education), Social work (including social work and legal aid, social care, social work and human resources, social and cultural work), Healthcare and Technology (including nursing, midwifery, chemistry, biomedical laboratory technology and applied informatics). The university college is actually a merger of five independent university colleges in 1995, resulting in the formation of a central services department, providing services for education and research coordination, human resources, quality management, IT, accountancy, HSE, procurement and communication. KHLeuven counts a total of 7.000 students and 700 staff members, which means it is a middle-sized university college in Flanders. KHLeuven offers education programs, but staff is also involved in practice based research and outreach projects. KHLeuven is part of the Association KU Leuven, bringing together 12 university colleges and 1 university. In 2013 KHLeuven is in the process of a new merger with another university college in the Association, the Limburg Catholic University College (KHLim).

### **5.2. Drivers, vision and strategy on sustainability**

#### ***5.2.1. Drivers and advantages for sustainability***

(1) Different drivers and advantages for sustainability can be identified within KHLeuven, mainly internal drivers. A first important driver has been the individual commitment of several staff members within the university college. People started with certain initiatives because they felt responsible at a personal level. These people could be seen as leaders or change agents for sustainability within the organisation (Cavagnaro and Curiel, 2012). Several staff members within departments could be identified as leaders for SD, working within their course, study program or department and encouraging others to integrate SD in their work. These individual leaders were often supported by several projects, financed by external funding bodies. However, when project funding came to an end, the leaders for SD felt abandoned and not supported anymore, as policy makers did not extend project funding. This proved to be an important de-motivator for leaders for SD, but also others to start integrating SD. The intrinsic motivation of individual staff members has been a very important driver for sustainability within KHLeuven, and they also managed to bring new drivers, such as external project funding - as a result of the work of an individual staff member that successfully wrote and submitted a project proposal - and SD assessments in the different study programs at KHLeuven.

(2) A second important driver that appeared throughout the years has been external funding. All projects and initiatives taken by the various departments have been funded by different organisations on different levels: the province of Flemish Brabant (local), the Flemish government (regional), and the European Commission (within the LLP-program). Without this extra financial support, a lot of initiatives would not have taken place, or would be realised at a much slower pace, or at the level of individual staff members.

(3) A third driver can be identified as the assessment of the state of SD-integration at all education programs. Within KHLeuven, the Auditing Instrument for Sustainability in Higher Education (AISHE, described by Roorda, 2002) was used to measure to what extent SD was already integrated in education. This turned out to be a very effective driver, as it was an eye-opener for policy and staff. Within the department of business studies, the AISHE audit of 2003 led to the definition of a vision on SD and a further integration in courses and operations of this particular department. External drivers for sustainability were not that clear within KHLeuven,

although the AISHE certificate could be seen as an extra incentive for some study programs to further implement sustainability.

### **5.2.2. Vision and strategy on sustainability**

Within KHLeuven, different steps on several levels were taken towards defining a vision and strategy on sustainability. The department of Business studies, when doing a pilot project on corporate social responsibility, and as a result of the very first AISHE audit in 2003, defined a vision on sustainability together with staff and students. This vision is seen as the first one within KHLeuven focusing explicitly on SD. It was defined on the level of a single department of the university college. Box 1. shows the SD vision of the Department of Business Studies (2003).

#### **Box 1. The SD vision of the Department of business studies (2003)**

ECHOes of Sustainability  
Higher Education and Sustainable Development:  
partners for the future

at a timeframe in which we  
are pushing the limits of the carrying capacity of the Earth  
and a growing gap between the haves and have-nots  
seems to make the world less stable

we cannot otherwise  
then bring people, planet and profit together in our thinking  
if we want to safeguard the future  
on the long-term and for anyone

that is why we as a Business school are convinced  
that corporate social responsibility makes a difference  
we consider it our task  
to deliver young professionals  
whose professionalism also comprises  
to conduct business in a sustainable way

under the motto 'do what you say'  
we want sustainable development  
to be introduced in our quality system  
for our own organisation

Staff members and SD leaders in other departments also felt the need for a vision and strategy on sustainability. As a result, a university college wide project 'DOHO' started in 2005 and resulted in a vision and policy plan and strategy towards sustainable higher education, presented in 2008. The vision on SD was defined together with staff and SD leaders from each department and focused on six themes, thus embracing the key roles of higher education: Policy; Communication; Relations; Education; Research and Outreach; Operations. The university college wide vision is depicted in Box 2.

#### **Box 2. The KHLeuven vision on Sustainable Development and Sustainable Higher Education (9 May 2008, reported (in Dutch) in Lambrechts et al., 2009)**

Today's society is at a turning point. The Western societal model is facing a number of limits on a

global level – such as limited energy supply, limited food services and limits of the carrying capacity of the environment – and will as a result of this, undergo a number of changes. Mankind will thus have to take a closer and critical look at her own actions and herein higher education definitely has a role to play: after all it is here that the future adults are educated, and higher education has to prepare them for the changes of the future. We want to contribute to the formation of a sustainable society, with a balance between economic, social and environmental aspects. In order to do this, KHLeuven does efforts to make its policy, communications, education, operations, research and outreach sustainable in a continuous process of improvement, and in consultation with all stakeholders.

1. At the **Policy** level KHLeuven's ambition is an optimal integration of sustainable development in consultation with all policy areas. As an organisation-wide focal point, sustainable development is a compass for all policy areas;
2. KHLeuven is in favour of efficient **Communication** concerning its efforts in terms of sustainable development. Next to this, efforts are also made to make the communication process more sustainable;
3. KHLeuven's aim is to establish sustainable **Relations** with its internal and external stakeholders: students, staff, professional field, local and regional surroundings (city of Leuven, Flanders), the natural environment. KHLeuven would like to respond to the needs and expectations of the professional field and of society, but also be an inspiration to encourage the professional field and society to move towards sustainable development;
4. A more sustainable **Education** is aimed at preparing students for the great challenges that we face as a global society. Staff is encouraged to teach their students with an open mind, exchange of learning experiences and respect for other cultures and opinions;
5. A more sustainable approach to **Research and Outreach** is aimed at a conceptual and methodological reorientation of this field. To this end, more multi-disciplinary and trans-disciplinary research as well as the integration of research and education are encouraged;
6. In terms of its own **Operations** KHLeuven takes concrete actions to stay within the boundaries of the earth's capacity, with attention to man, the environment and society. To this end, it works to develop an internal environmental care system and commits to implementing a sustainable personnel policy, where wellbeing is at the center, and with room for participatory and transparent communication.

Furthermore, this vision on SD and sustainable higher education (SHE) was translated in an SD implementation model, described by Lambrechts et al. (2008, 2009 and 2010). The implementation model defined guiding principles and key factors to integrate sustainable development within a single university, focusing on policy, education, research, outreach and operations of the university system.

In order to guide the integration process within KHLeuven, a policy plan for SD was defined, envisioning the period between 2008 and 2013. This policy plan was defined in a bottom-up approach, with input from staff members from each department and study program of KHLeuven, resulting in a plan with six strategic goals (referring to the six key points in the SD vision), divided into thirty operational goals and seventy actions and indicators. Box 3 gives an overview of strategic and operational goals envisioned in the SD policy plan.

### **Box 3. KHLeuven SD policy plan 2008-2013**

Strategic goal 1. KHLeuven integrates SD principles in her policy

- Operational goal 1.1. Integration of SD in the educational policy plan
- Operational goal 1.2. Integration of SD in the policy plans for research and outreach
- Operational goal 1.3. Integration of SD in other policy plans, concerning operations, mission and vision
- Operational goal 1.4. Integration of SD in departmental policy plans.



Strategic goal 2. KHLeuven integrates SD in her communication

- Operational goal 2.1. Make the communication process more sustainable
- Operational goal 2.2. Efficient communication about our initiatives on SD

Strategic goal 3. KHLeuven aims to establish sustainable relations with its internal and external stakeholders

- Operational goal 3.1. Sustainable relations with employees
- Operational goal 3.2. Sustainable relations with students
- Operational goal 3.3. Sustainable relations with the work field and civil society
- Operational goal 3.4. Sustainable relations with the local and regional policy makers
- Operational goal 3.5. Sustainable relations with other educational organisations

Strategic goal 4. KHLeuven integrates SD in her education

- Operational goal 4.1. Integrate SD in competences of our study programs
- Operational goal 4.2. Methodological integration of SD principles
- Operational goal 4.3. Participative learning and assessment process
- Operational goal 4.4. Integrate relevant SD content in study programs
- Operational goal 4.5. Integrate SD principles in practical organisation of education
- Operational goal 4.6. SD integration in visitation and accreditation process

Strategic goal 5. KHLeuven integrates SD in her research and outreach

- Operational goal 5.1. Define a set of SD criteria for research and outreach
- Operational goal 5.2. Do research about SD related topics
- Operational goal 5.3. Integrate SD in research processes and methodologies
- Operational goal 5.4. Integration of research in education

Strategic goal 6. KHLeuven integrates SD in her operations

- Operational goal 6.1. Integrate SD principles in HR policy
- Operational goal 6.2. Integrate SD principles in student services
- Operational goal 6.3. Integrate SD principles in procurement and financial policy
- Operational goal 6.4. Integrate SD in mobility plans
- Operational goal 6.5. Integrate an environmental management system
- Operational goal 6.6. Integrate SD principles in catering
- Operational goal 6.7. Integrate SD principles in ICT services
- Operational goal 6.8. Integrate SD principles in the workspace and environment
- Operational goal 6.9. Integrate SD principles in cultural aspects

In addition, thanks to the attention to SD given in several projects, sustainability goals and initiatives were integrated in other policy plans, e.g. the educational policy plan, the research policy plan and the Health, Safety and Environment policy plan.

### 5.3. The integration process

The SD integration process at KHLeuven started with individual projects and activities that support a further integration. Over the past ten years, a lot of initiatives were taken within different departments, table 1. shows the most important steps in the integration process.

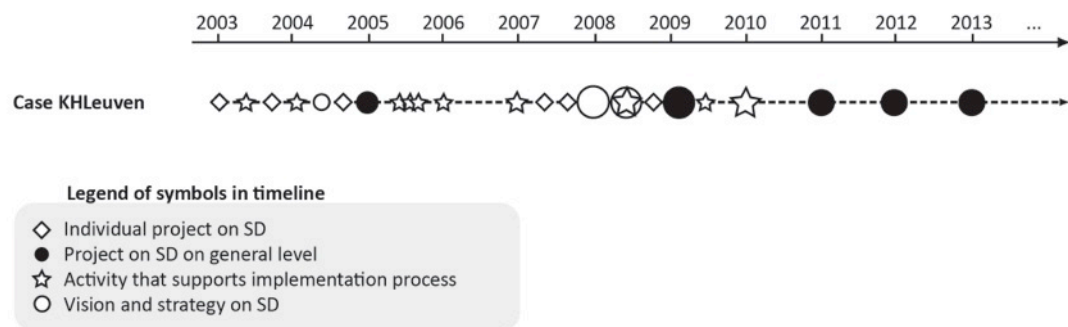
**Table 1.** Timeline of different steps in integration process

Year	Initiative
2003	start of pilot project (Trivisi) in the department of business studies
	first AISHE audit in the department of business studies
	screening of all courses of the department of business studies
2004	second AISHE audit in the department of business studies

	vision on SD for the department of business studies
	start of the CSCT project in teacher training
2005	start of the DOHO-project
	AISHE audits in the department of teacher training, social work, health care and technology
2006	AISHE audits in the department of teacher training
2007	AISHE certificate – one star awarded to all study programs
	start of the SOWEDO project (Social Work and SD) in Department of Social Work
	start of research project on SD integration in marketing study programs (Department of business studies)
2008	SD vision formulated for the whole university college
	first SD policy plan, envisioning the period of 2008-2013
	start of the REBEL project (Responsible Business) in Department of business studies
2009	results of the DOHO project published and presented to larger public (external communication)
	new internal AISHE audit in the department of business studies
2010	AISHE certificate – two stars awarded to department of business studies
2011	calculation of the Ecological footprint of the whole university college
2012	sustainability criteria integrated in general quality management system
2013	sustainable food within the university colleges' restaurants

Figure 2 shows a timeline of the initiatives. Following milestones can be detected in the integration process:

- 2003:** start of the pilot project in the department of business studies with external funding; including a first AISHE audit and a first vision on SD at the level of one department
- 2005:** start of the university college-wide DOHO-project with external funding; AISHE audits in all education programs
- 2007:** one star AISHE certificate for all study programs
- 2008:** presentation of the university college wide vision and policy plan for SD
- 2010:** two star AISHE certificate for the department of business studies



**Figure 2.** Timeline SD initiatives at KHLeuven

### 5.3.1. Description of the steps taken in the integration process

Regarding the integration process, different types of initiatives were taken at KHLeuven:

(1) individual projects, focused on a particular topic or study program, and funded by external organisations. Quite often, these projects also had the intention to create and integrate instruments, models or frameworks within the organisation, e.g. the competence model for teacher training, the e-modules on responsible business, the framework for SD in social work, and the implementation model for Sustainable Higher Education. However, often these instruments and models were not successfully and structurally embedded within the organisation;

(2) policy and strategy on SD, focusing on defining a vision on SD, goals, actions and policy planning. These initiatives were a bit more successful in embedding SD within the organisation, however, a true fit between bottom-up and top-down was not achieved on the long term, as a translation from the general level to the local (departmental) level was not always successful;

(3) the evaluation and assessment of the current situation of SD integration. Within all study programs of KHLeuven, several AISHE audits were done in order to find out where and to what extent SD is already integrated. The results were used to start new initiatives and to improve the SD integration. These audits were often a starting point for the integration of SD for the individual study programs.

### **5.3.2. Integration approach**

Looking at the timeline and different initiatives within KHLeuven, several stages within the integration approach can be detected:

#### **(1) First stage (2003-2005): bottom-up, local leaders for SD**

This stage actually starts before 2003, as many SD initiatives were already done by individuals before this date. This stage is characterised by several initiatives taken within different study programs, and individuals working within their own courses and projects.

#### **(2) Second stage (2005-2007): local leaders for SD are supported with external, project based funding**

Leaders for SD had the opportunity to further work on the topic, connect their work to each other, exchange experiences and expertise, prepare policy documents and new initiatives.

#### **(3) Third stage (2007-2010): SD topic lifted up at the level of the university college.**

The bottom-up approach meets a top-down approach. Ideally, the university college-wide vision, as described in Box 1, was meant to be translated at the level of a single department or - given the diversity and singularity of courses and programs - even at the level of a single study program. Initiatives were taken in different departments and study programs, however not all managed to embed the vision and strategy at the local level.

#### **(4) Fourth stage (2010-2013): individual projects stop, results are reported.**

Some new projects start up, but there's a risk the situation is going back to the second stage, where the integration process depends largely on the interest and good-will of local leaders for SD.

It is clear that, however at some point the bottom-up approach was picked up by a central vision and policy plan, this is not enough to really support the initiatives. This comprises a very important issue within the integration process of SD, namely the risk of getting back to business as usual after project funding and support stops.

As a result of the university college wide research project focused on the integration of SD in higher education (DOHO), an implementation model was defined. This implementation model included different stepping stones, guiding principles and key success factors for SD integration at the level of a single HEI, within its current structure and framework. For the key roles of a HEI, namely (a) education, (b) research and outreach and (c) operations, specific guidelines were presented. The implementation model was described and presented in Lambrechts et al. (2008, 2009 and 2010). Figure 3 shows the general aspects of the implementation model.

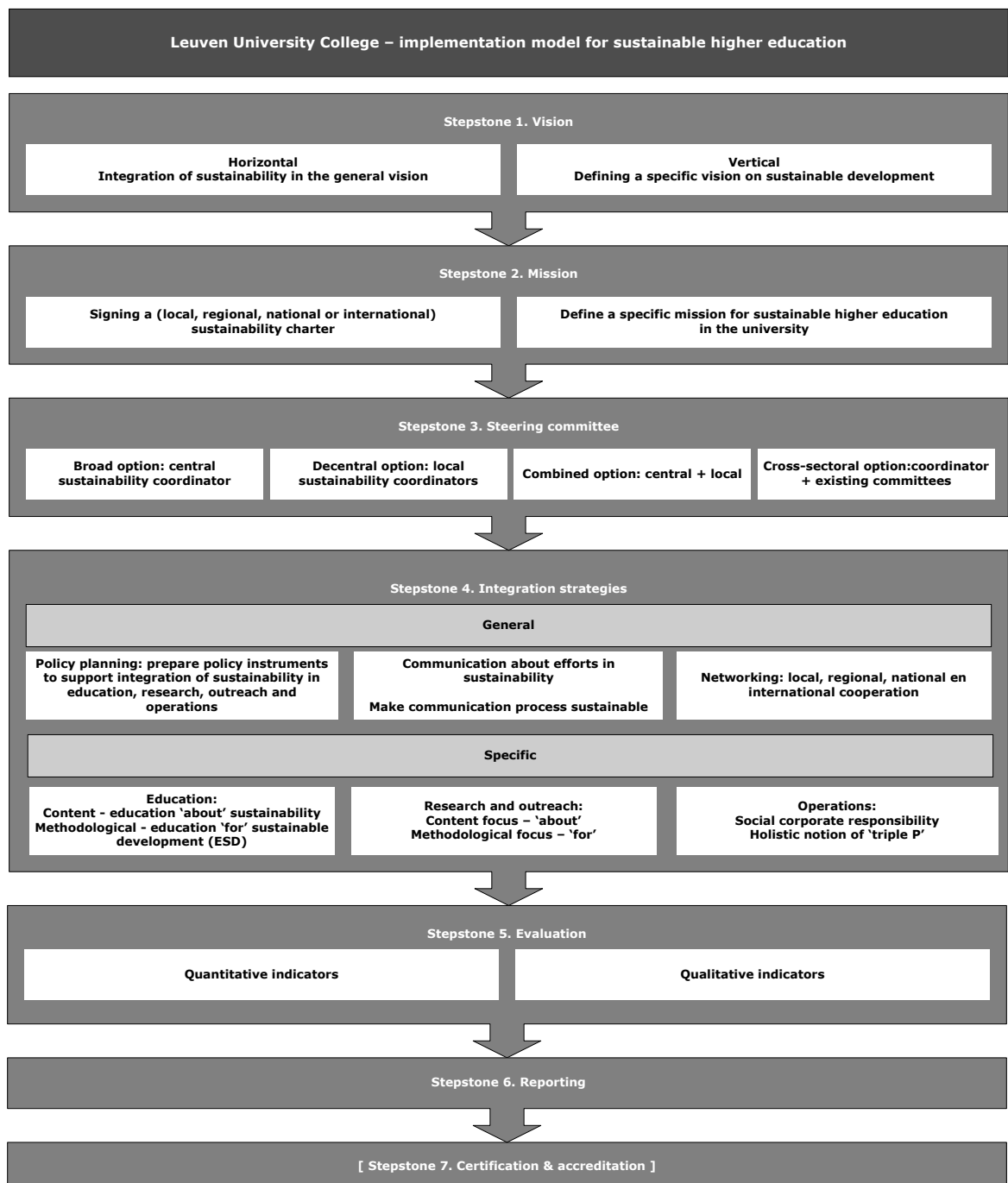


Figure 3. General SD implementation model  
(source: Lambrechts et al., 2008, 2009, 2010)

## 5.4. Human factors during integration

### 5.4.1. Significant factors of resistance

Within KHLeuven, following barriers could be defined:

- (1) Local leaders for SD did not always feel supported by colleagues or policy makers, as they didn't see the relevance of the topic for the university college.

(2) A very important factor of resistance was the lack of resources for SD-projects: in a climate of cutting costs, very strongly felt within the Flemish professional bachelor programs, and made worse by the crisis from 2008, it was very hard to find proper support for SD related projects and initiatives. Most of the projects were supported by external project based funding, which is a good start, but does not give any guarantee of a structural integration of SD into the university system.

(3) After a few years of focusing on the theme, some people felt in a way which could be described as a “Sustainability-fatigue”: people didn’t like the concept of SD or the story of uncertainty and precaution that is inherently linked to SD.

(4) Local leaders for SD got demotivated after their projects finished, because there was no (financial) support for further projects, meaning that not much happened anymore with the work they did. There was growing insecurity about the continuity of SD integration and disappointment after projects were reported, as project results were not fully implemented in the general structure of the organisation.

#### ***5.4.2. Communication on sustainability issues***

In the period of 2003-2006, the AISHE-audits of all study programs pointed out that communication about SD issues was a weak point within KHLeuven. Students and employees were not aware about the initiatives and efforts, and therefore, there was a lack of acknowledgement of the topic. As a result, a lot of efforts were made to communicate about the SD initiatives and tackle this lack of visibility, also supported by the vision, strategy and policy plan for SD. Communication on SD happened in the form of:

- (1) Seminars and round tables on SD related topics for students;
- (2) Training initiatives for employees;
- (3) Internal communication through the internal communication platform;
- (4) External communication through press releases about SD initiatives.

The communication was focused on two types of content: (a) Presenting the results of specific projects of KHLeuven, e.g. market research on segmentation of consumers based on their thoughts and attitudes towards SD, the results of the AISHE audits, the integration of SD in social work, etc.; (b) Communication about specific topics and methods to enable students and staff to integrate SD in their own work, e.g. thematical lectures on SD issues, information sessions about competences for SD, guidance of staff to integrate SD in their own course, etc.

The extra efforts on communication on SD issues were awarded in the 2010 AISHE audit, as the criterion regarding “communication” was evaluated to be very strong. However, continuing attention is needed for communication on SD issues. The training initiatives for employees were not always that successful, and sometimes decisions at policy level (e.g. when funding for SD projects and coordination stopped) resulted in actions that were rather negative for the SD integration process.

#### ***5.4.3. Empowerment and participation***

##### ***5.4.3.1. Power, decision making and responsibility***

Local leaders for SD operated within their own courses, projects or small initiatives in which they had the power in the decision process and full responsibility on the project and its results.

The drafting of a university college wide SD policy plan at KHLeuven can be regarded as an example of bottom-up approach in policy planning, thus empowerment of local leaders. The policy plan was drafted by a group of 9 employees from all departments and study programs, in a process of presentations and discussions about the topic. The structure of the policy plan follows the general policy framework of the KHLeuven, thus

providing an optimal fit with other policy plans. A lot of individual leaders for SD hoped that the policy plan would encourage a university college wide integration of SD, as it provided a link between bottom up and top down approach. However, the role of individual employees cannot be underestimated in this process, as the top-down guidance needed to be translated at the level of the individual departments and study programs again.

A key role in the SD integration process of the policy plan at KHLeuven was the Sustainable Higher Education working group, which brought together 10 employees – ambassadors of SD -, coming from all departments, and representing study programs, research and policy of the organisation. The working group had 3 goals:

- (1) steering committee of the university college wide DOHO project (2005-2008);
- (2) prepare the SD vision and strategy, documented in the SD policy plan
- (3) initiate new initiatives SD in the different study programs and departments.

Being member of this working group was an official task, as each member received a certain percentage of Full Time Equivalent (FTE) to spend for this purpose. The percentage FTE ranged from 2,5 to 5 per member. It gave them the responsibility by allowing them to spend time to the working group and SD integration. The presence of these ambassadors made it possible to bring together the bottom-up approach with the top down approach, whereby the ambassadors ensured a two-directional flow of grasping and spreading information, initiatives, ideas, as well as to enthuse other employees about SD within their department. Again, after the project based funding stopped, no guarantee on a structural integration or support could be given, which made the local leaders – the ambassadors – feel left alone and demotivated.

#### *5.4.3.2. Information, knowledge and skills*

Different stages can be seen regarding information, knowledge and skills:

(1) In the first stage, where local SD leaders were operating individually, information was not spread and shared, because the leaders didn't know each other's initiatives. This resulted in comparable, but isolated initiatives in different departments.

(2) In the second stage, in order to tackle this problem, a big inventory of SD initiatives started in all departments and study programs. This inventory collected all SD initiatives taken within the KHLeuven. Results of the inventory showed that since the start of the university college wide DOHO project in 2005, the amount of initiatives clearly increases, as shown in figure 4. Moreover, 41% of the SD initiatives were taking place in the curriculum, with 48% of the initiatives targeting students. Figure 5 and Figure 6 show the focus and target groups of the initiatives in the inventory.

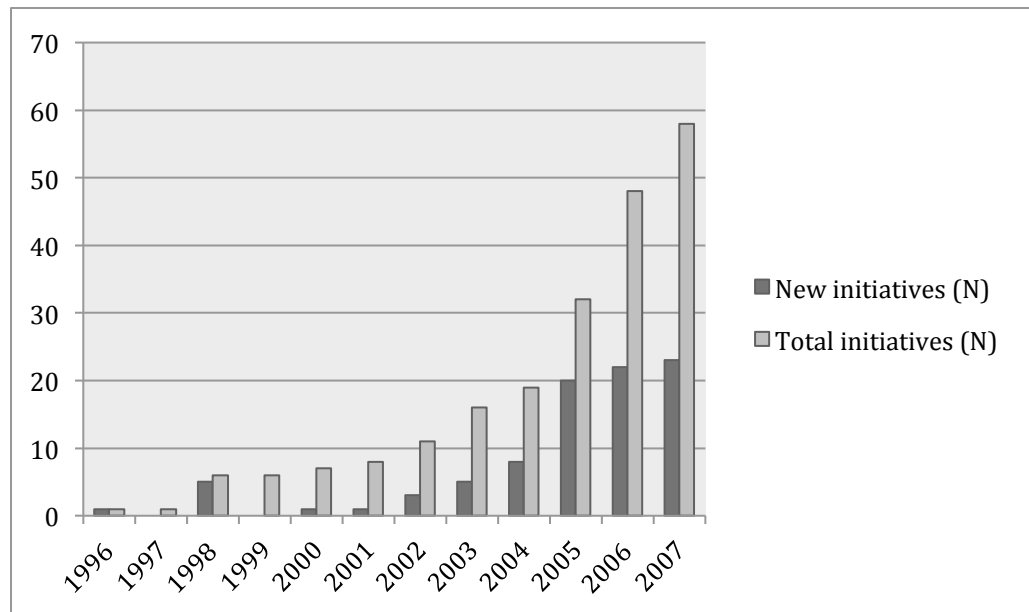


Figure 4. Number of SD initiatives (new and total) identified in the inventory (Lambrechts et al., 2009)

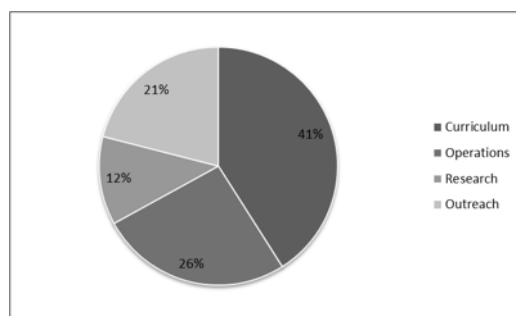


Figure 5. Focus of initiatives (Lambrechts et al., 2009)

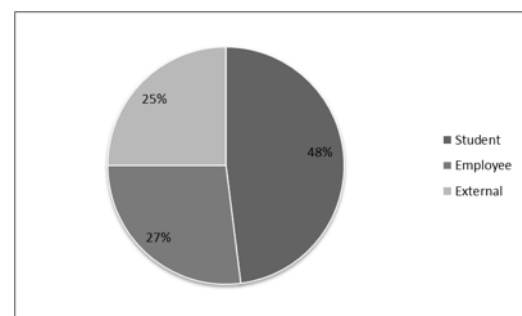


Figure 6. Target group of the initiatives (Lambrechts et al., 2009)

(3) In the third stage, local leaders and their initiatives got to learn from each other, resulting in strong cooperation between several employees and groups. At that stage, the information was available, known, shared and used by all departments and study programs. Project based funding allowed local leaders for SD to connect, exchange thoughts, ideas and expertise, and prepare policy documents.

(4) A fourth stage is characterised by a new translation process from the central viewpoint to the individual and departmental level. As local leaders stopped working on the topic (due to retirement or end of funding), information was again gathered and used at the local level, and not always shared between all internal stakeholders. The third stage is therefore heading back towards the first one.

#### 5.4.3.3. Initiative, creativity and autonomy

The initiative for SD integration always came from individual employees, who were interested in the topic and wanted to achieve something within their own working space. These individuals can be seen as local leaders for SD or ambassadors.

As these individual employees gained expertise in the field of SD, they were also successful in writing project proposals that were funded by external organisations. This external funding was an extra incentive for SD integration, as people could spend a

certain amount of their time to focus on SD in the KHLeuven. A high level of autonomy is given to these employees to write and fulfill projects. This also accounts for other employees and how they want to integrate SD in their individual courses. It offers individuals the freedom for creativity in their work.

#### **5.4.4. Organisational culture: adaptations**

The organisational culture within KHLeuven is characterised by the following aspects:

A first cultural characteristic is defined in the overall core values and core competences for all staff and students. KHLeuven pays particular attention towards (a) learning, (b) commitment, (c) Initiative, (d) Cooperation and (e) respect. As a learning organisation, taking initiative, being committed and cooperate in a respectful way are key elements of the culture.

A second cultural characteristic results from the specific outcome of the merger in 1995. However merged into one organisation with a central department for overarching services, the - at that time - five departments were still operating autonomous in a decentralised structure and with their own specific identity and culture.

A third characteristic is found in the individual role and autonomy of staff in all departments and study programs. Like many HEI's, staff has a lot of freedom in the way they organise their courses, projects and way of working. This is shown in the first stage of the integration process, where individual staff members were starting with SD initiatives. This characteristic cannot be underestimated, because without this individual freedom, staff would not have the chance and freedom to develop innovative ideas and initiatives.

A fourth characteristic emerged during and after the DOHO-project. Working together on this specific project offered the organisation the opportunity to prepare SD integration and draft plans, instruments and models. A lot of initiatives were taken, a lot of products and outcomes were available, but they were poorly integrated in the structure of the organisation. This is shown by the SD implementation model, which was drafted bottom-up, then provided top-down guidance on SD integration through the policy plan, but unfortunately was poorly translated into the autonomous level of departments and study programs.

## **6. Discussion: influence of human factors on SD integration in higher education**

When considering the progress of the integration process of SD in KHLeuven, one can notice that the main stages strongly correspond with the first stages of a change process mentioned by Verhulst (2012) and other authors: starting with independent projects, then working towards a shared vision, mission and strategy for SD, and then aiming at integration of this vision, mission and strategy in the whole organisation. The latter stage however did only partially take place at KHLeuven because of a lack of resources resulting from the end of the DOHO project and the high level of independence of individual study programs and departments. The following paragraph discusses how the human factors influenced the different stages of the integration process, as well as how these human factors are mutually related. Table 2 gives an overview of the presence of the different human factors in each of the stages.

**Table 2.** Overview of human factors in the subsequent stages of the integration process of SD in the KHLeuven case

	<b>Approach</b>	<b>Factors of resistance</b>	<b>Communication</b>	<b>Empowerment</b>	<b>Culture</b>
<b>First stage</b>	Bottom-up, individual interest in course or project	- (Strong intrinsic motivation of individuals)	No coordinated communication on SD	Individual initiatives, isolated and not aware of each other	* core values and core competences focusing on learning, commitment, initiative, cooperation and respect,
<b>Second stage</b>	Bottom-up, several projects on individual level; connecting between projects	Lack of support for SD leaders	Communication between SD projects	Project funding for SD-projects, giving a boost to the SD integration. More collaboration between local leaders.	* autonomous culture



<b>Third stage</b>	Bottom-up meets top-down; development of SD implementation plan and strategy	-	Coordinated communication on SD by committee to employees and students	Bottom-up approach to develop models, plans and structures for SD integration. Committee with local leaders (ambassadors). The bottom-up approach leads to top-down guidance for SD integration with the design of an implementation model, a policy plan and key success factors. Individual leaders feel acknowledged for their work.	in departments and study programs  * autonomous role of individuals in the organisation
<b>Fourth stage</b>	Top-down approach not structurally embedded within the organisation.	'sustainability fatigue', lack of support for SD leaders, lack of funding for SD-projects, demotivation after projects ended	Less coordinated communication on SD	After project funding stops, no new funding provided. This results in demotivation of individual staff and a lack of translation of the top-down models at the level of individual departments and study programs.	

The first stage corresponds with results from earlier studies (e.g. Verhulst, 2012), in which several independent projects are performed by individuals that have a strong intrinsic motivation to work on SD, even without financial or other support. These individuals are the initiators of the integration of SD in the HEI. A high level of autonomy, together with this intrinsic motivation, led to several projects that support SD at KHLeuven.

In the second stage, several – still independent – projects have been completed, whereby communication between the project teams was provided. This made it possible to exchange knowledge and information, to learn from and support each other. This strengthened the connection between the teams and supported their will to work further – together – on the integration on SD on a larger scale. This is, however, only possible when also other employees than those in the project team, do get involved in SD integration: through communication (this need was indicated by the AISHE-audits).

In a third stage, a lot of attention has been paid to communication, focusing on (a) communication about SD-initiatives and results of KHLeuven, and (b) communication about SD related topics to staff and students in order to enhance their abilities to integrate SD. Internal communication thereby focused on spreading information (e.g. intranet, seminars) and empowerment and participation (e.g. committee on SD, local leaders, roundtables, trainings). This communication raised the participation and empowerment of a larger group of employees, which was even strengthened by the bottom-up approach that has been followed to design an implementation model, a policy plan and key success factors for SD integration in the whole HEI. The bottom-up approach provided a framework for top-down guidance of SD integration. Individual leaders thereby felt acknowledged for their work. This approach also enabled a small shift in culture, whereby the strong presence of autonomy of both individuals and departments was set aside for a shared goal: the integration of SD at KHLeuven. Empowerment and communication form two factors that strongly supported the integration of SD in this stage.

In a fourth stage, the top-down approach is not embedded structurally within the organisation. After project funding stopped, no new funding was provided, resulting in demotivation of individual staff and a lack of translation of the top-down models at the level of individual departments and study programs. Shifting from a bottom-up to a top-down approach entails a larger group of employees that will need to get informed and involved in the process. In order to successfully make this shift, one needs support from the top level of the organisation, more attention for empowerment and communication (Verhulst, Dewit and Boks, 2012). In this case however, the opposite occurred: due to the end of the large DOHO project, communication on SD ended, which on its turn led to a drop in attention for empowerment and participation. Together with this, coordination responsibilities on SD issues – previously to the local leaders - were suddenly lacking. This resulted in more resistance, a.o. initiators feel abandoned, lack of support for SD leaders, sustainability-fatigue, demotivation after projects ended. This finding corresponds with the insight of Kotter and Schlesinger (2008), who indicated the need for empowerment to lower resistance. Concerning cultural aspects, one can notice that the small change towards a common goal shifts back into the autonomous culture in departments and study programs and the autonomous role of individuals in the organisation. This shows that, how many initiatives undertaken bottom-up and top-

down, there is always a risk that after specific projects end, the university system is going “back to business as usual”.

One of the main issues appearing in this case is the need for continuity on integrating SD in higher education: in order to step over the dependence on the sequence and continuity of projects with external funding, and thus preventing a rebound effect on all the efforts done on SD integration, a HEI could assign responsibility (and time) on SD integration to one or more employees with internal funding. However, there are not that many educational institutes where the financial situation makes this possible. Another option could be to foresee a long-term continuation of the integration process. This could be done together with the development of a strategy, in which the different goals and steps of the integration of that strategy are being planned. There, one could include a long-term plan that indicates a timeline of several subsequent projects, as well as the resources needed for each project. By including this in the strategy on SD, the HEI can proactively apply for external funding and projects that support SD integration in higher education.

## **7. Conclusions**

This paper discusses the integration of SD in higher education from the perspective of change management, with a focus on human factors: resistance, communication, empowerment and organisational culture. A conceptual model bringing together these four human factors with the integration process has been used to analyse the case of KHLeuven.

The case study provides insights on the progress of the integration process. In the ten year period of 2003-2013, the SD integration at KHLeuven followed four stages, going from individual initiatives in stage 1, connecting projects in stage 2, preparing a top-down approach in stage 3, and a lack of translation of this top-down approach in stage 4. The case shows two types of resistance that emerged: resistance related to financial and structural support and resistance related to empowerment and personal support. It also showed that the bottom-up approach successfully connected with a top-down approach, but that there still is a risk for de-motivation and sustainability fatigue after initiatives (and funding) ends.

Moreover, indications are given in the case that good communication and empowerment - and their mutual connection - form a critical element to successfully integrate SD in higher education. For the HEI, the analysis offers more profound insights on how human factors can influence the integration process. Next to that, these insights can offer guidance to HEIs to further work on the integration of SD, especially those who already took considerable steps in this process and want to prevent the momentum to get lost, resulting in a de-motivation of individual SD leaders, and the risk of going back to business as usual.

The conceptual model proved to be a good framework to look at the SD integration in higher education, and the authors plan to further work on this model in order to analyse more cases from the perspective of human factors.

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